CLAIMS

I claim:

1. A transceiver comprising:

a transmitter that is configured to receive an input signal and produces therefrom a first transmit quadrature signal and a second transmit quadrature signal,

a modulator that is configured to modulate the first transmit quadrature signal and the second transmit quadrature signal and to produce therefrom a composite signal that includes an intended signal component and an unwanted signal component,

a demodulator that is selectively configured to demodulate the composite signal and to produce therefrom a first receive quadrature signal and a second receive quadrature signal, and

a receiver that is configured to receive the first receive quadrature signal and the second receive quadrature signal, and to produce therefrom a characterization signal that is correlated substantially to the unwanted signal component of the composite signal,

wherein

the transceiver is configured to adjust at least one of a phase and an amplitude of at least one of the first transmit quadrature signal and the second transmit quadrature signal, based on the characterization signal.

2. The transceiver of claim 1, further including

a local oscillator that is configured to provide a first oscillation signal and a second oscillation signal, and

wherein

the phase of the least one of the first transmit quadrature signal and the second transmit quadrature signal is adjusted by modifying a phase relationship between the first oscillation signal and the second oscillation signal.

3. The transceiver of claim 1, further comprising:

a double quadrature module that provides a high image rejection at the receiver, thereby providing a high sensitivity to the characterization signal.

4. The transceiver of claim 1, wherein

the intended signal component is located at a first sideband frequency,

the unwanted signal component is located at a second sideband frequency, and

the transceiver further includes a switch that is configured to effect a frequency change at the receiver such that the receiver is centered at the second sideband frequency.

5. The transceiver of claim 4, further including

a local oscillator that is configured to provide an in-phase oscillation signal and a quadrature-phase oscillation signal, and

wherein

the demodulator is configured to demodulate the composite signal based on the in-phase oscillation signal and the quadrature-phase oscillation signal, and

the switch is configured to effect the tuning frequency change by interchanging the in-phase oscillation signal and the quadrature-phase oscillation signal.

6. The transceiver of claim 1, wherein

the receiver is further configured to produce the characterization signal based on a receiver tuning frequency, and

the transceiver further includes a switch that is configured to effect a change in the modulator so that the unwanted signal component is produced at the receiver tuning frequency.

7. The transceiver of claim 6, further including

a local oscillator that is configured to provide an in-phase oscillation signal and a quadrature-phase oscillation signal, and

wherein

the modulator is configured to produce the composite signal based on the in-phase oscillation signal and the quadrature-phase oscillation signal, and

the switch is configured to effect the change in the modulator to produce the unwanted signal component at the receiver tuning frequency by interchanging the in-phase oscillation signal and the quadrature-phase oscillation signal.

8. A method of suppressing an unwanted signal component from a transmission of a transceiver, the method comprising:

receiving an input signal and producing therefrom a first transmit quadrature signal and a second transmit quadrature signal,

modulating the first transmit quadrature signal and the second transmit quadrature signal and producing therefrom a composite signal that includes an intended signal component and the unwanted signal component,

demodulating the composite signal and producing therefrom a first receive quadrature signal and a second receive quadrature signal,

receiving the first receive quadrature signal and the second receive quadrature signal, and producing therefrom a characterization signal that is correlated substantially to the unwanted signal component of the composite signal,

and adjusting at least one of a phase and an amplitude of at least one of the first transmit quadrature signal and the second transmit quadrature signal, based on the characterization signal, to suppress the unwanted signal component.

9. The method of claim 8, wherein

the intended signal component is located at a first sideband frequency,

the unwanted signal component is located at a second sideband frequency, and

the method further includes

changing a receiver center frequency such that the characterization signal is based on a measure of a signal that is received at the second sideband frequency.

10. The method of claim 9, further including

providing an in-phase oscillation signal and a quadrature-phase oscillation signal, and wherein

the demodulating of the composite signal includes

demodulating the composite signal based on the in-phase oscillation signal and the quadrature-phase oscillation signal, and

the changing of the receiver center frequency includes

interchanging the in-phase oscillation signal and the quadrature-phase oscillation signal.

11. The method of claim 9, wherein

producing the characterization signal is based on a receiver center frequency, and

modulating the first transmit quadrature signal and the second transmit quadrature signal is effected so as to provide the unwanted signal component at the receiver center frequency.

12. The method of claim 11, further including

providing an in-phase oscillation signal and a quadrature-phase oscillation signal, and wherein

modulating the first transmit quadrature signal and the second transmit quadrature signal to provide the unwanted signal component at the receiver center frequency is effected by interchanging the in-phase oscillation signal and the quadrature-phase oscillation signal.

13. The method of claim 8, wherein

adjusting the phase of at least one of the first transmit quadrature signal and the second transmit quadrature signal includes adjusting the relative phase of a first oscillation signal and a second oscillation signal that are used to effect at least one of modulating the first and second transmit quadrature signal and demodulating the composite signal.

14. A transceiver comprising:

a receiver that is configured to receive first information signals,

a transmitter that is configured to transmit second information signals, and

a switch that is configured to couple the transmitter and the receiver so that the first information signals received by the receiver correspond to the second information signals that are transmitted from the transmitter during a calibration mode,

wherein

the transceiver is configured to provide for an adjustment of at least one of a phase and a gain of the second information signal in dependence upon the first information signals that are received during the calibration mode.

15. A method of calibrating a transmitter in a transceiver that includes a receiver comprising:

transmitting a signal via the transmitter,

receiving the signal via the receiver to provide a characterization signal, and

adjusting the transmitter in dependence upon the characterization signal.

16. The method of claim 15, wherein

adjusting the transmitter includes adjusting at least one of a phase or a gain of the transmitter to facilitate image reduction.

17. The method of claim 15, wherein

adjusting the transmitter includes adjusting a phase of one or more oscillation signals to facilitate image rejection.